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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,244	08/17/2006	Masahiro Sato	128530	1479

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EXAMINER	
FOGARTY, CAITLIN ANNE	

ART UNIT	PAPER NUMBER
1793	

MAIL DATE	DELIVERY MODE
06/30/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/584,244	SATO ET AL.	
	Examiner	Art Unit	
	CAITLIN FOGARTY	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/23/2006, 8/17/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 1 – 18 are pending and presented for this examination.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statements (IDS) were submitted on June 23, 2006 and August 17, 2006. These submissions are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1, 2, 4 – 7, 9, 11, 12, 14, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouse et al. (US 2003/0103862).

With respect to instant claim 1, paragraphs [0006]-[0020] of Bouse disclose a Ni-base superalloy with an overlapping composition as seen in Table 1 below.

Table 1

Element	Instant Claim 1 (weight %)	Bouse et al. (weight %)	Overlapping Range (weight%)
Co	9 – 11	5 – 15	9 – 11
Cr	9 – 12	7 – 12	9 – 12
Mo	≤ 1	1 – 5	1
W	6 – 9	3 – 12	6 – 9
Al	4 – 5	3 – 5	4 – 5
Ti	4 – 5	3 – 5	4 – 5
Nb	≤ 1	0 – 2	0 – 1
Ta	≤ 3	2 – 6	2 – 3
Hf	0.5 – 2.5	0 – 2.0	0.5 – 2.0
Re	≤ 3	0 – 10	0 – 3
C	0.05 – 0.15	0.06 – 0.10	0.06 – 0.10
B	0.005 – 0.015	0.0080 – 0.013	0.008 – 0.013
Zr	≤ 0.05	---	0
Ni + impurities	Balance	Balance	Balance
V	---	0 – 3	0

Bouse satisfies the claim limitation "consisting essentially of" because the only additional element the superalloy of Bouse contains is V from 0 - 3 wt% which satisfies the limitation when V is 0 wt%.

In regards to instant claim 2, paragraphs [0006]-[0020] of Bouse disclose a Ni-base superalloy with an overlapping composition as seen in Table 2 below.

Table 2

Element	Instant Claim 2 (weight %)	Bouse et al. (weight %)	Overlapping Range (weight%)
Co	9 – 10	5 – 15	9 – 10
Cr	9 – 10	7 – 12	9 – 10
Mo	0.5 – 1	1 – 5	1
W	6 – 8	3 – 12	6 – 8
Al	4 – 5	3 – 5	4 – 5

Ti	4 – 5	3 – 5	4 – 5
Ta	2 – 3	2 – 6	2 – 3
Hf	0.5 – 2.5	0 – 2.0	0.5 – 2.0
Re	1 – 3	0 – 10	1 – 3
C	0.05 – 0.1	0.06 – 0.10	0.06 – 0.10
B	0.005 – 0.01	0.0080 – 0.013	0.008 – 0.013
Zr	≤ 0.02	---	0
Ni + impurities	Balance	Balance	Balance
Nb	---	0 – 2	0
V	---	0 – 3	0

Bouse satisfies the claim limitation "consisting essentially of" because the only additional elements the superalloy of Bouse contains are Nb from 0 – 2 wt% and V from 0 - 3 wt% which satisfies the limitation when Nb is 0 wt% and V is 0 wt%.

Instant claims 4 and 7 further narrow the compositional range of Hf recited in instant claims 1 and 2, respectively. However, the compositions still overlap with the range of Hf disclosed in Bouse.

Since the claimed compositional ranges of claims 1, 2, 4, and 7 either overlap or are within the ranges disclosed by Bouse, a prima facie case of obviousness exists. See MPEP 2144.05. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed Ni-base superalloy composition from the Ni-base superalloy composition disclosed by Bouse because Bouse teaches the same utility (i.e. a gas turbine component) in the whole disclosed range.

In regards to instant claims 5, 9, 11, and 12, paragraphs [0006]-[0020] of Bouse teach that the nickel base superalloy is suitable for use in a gas turbine component. Therefore, it would have been obvious to one of ordinary skill in the art to use the nickel base superalloy of Bouse in the manufacturing of a gas turbine component.

Regarding instant claims 6, 14, 16, and 17, paragraph [0001] of Bouse discloses that the nickel base superalloy is directionally solidified. Therefore, it would have been obvious to one of ordinary skill in the art to manufacture the gas turbine component, which uses the Ni-base superalloy, by a directional solidification casting method. In addition, instant claims 6, 14, 16, and 17 are product-by-process claims. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113.

7. Claims 3, 8, 10, 13, 15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cetel et al. (US 5,451,142).

With respect to instant claim 3, claim 1 of Cetel discloses a Ni-base superalloy with an overlapping composition as seen in Table 3 below.

Table 3

Element	Instant Claim 3 (weight %)	Cetel et al. (weight %)	Overlapping Range (weight%)
Co	10 – 11	4 – 13	10 – 11
Cr	10 – 12	4 – 11	10 – 12
W	8 – 9	0 – 13	8 – 9
Al	4 – 5	4 – 7	4 – 5
Ti	4 – 5	0 – 5	4 – 5
Nb	≤ 1	0 – 2	0 – 1
Hf	0.5 – 2.5	0 – 2	0.5 – 2
C	0.05 – 0.15	0 – 0.2	0.05 – 0.15
B	0.005 – 0.015	0 – 0.02	0.005 – 0.015
Zr	0.01 – 0.05	0 – 0.1	0.01 – 0.05
Ni + impurities	Balance	Balance	Balance

Mo	---	0 – 7	0
Ta	---	0 – 13	0
Re	---	0 – 4	0
Y	---	0 – 0.02	0

Cetel satisfies the claim limitation "consisting essentially of" because the only additional elements the superalloy of Cetel contains are Mo, Ta, Re, and Y which satisfies the limitation when they are present in 0 wt%.

Instant claim 8 further narrows the compositional range of Hf recited in instant claim 3. However, the compositions still overlap with the range of Hf disclosed in Cetel.

Since the claimed compositional ranges of claims 3 and 8 either overlap or are within the ranges disclosed by Cetel, a prima facie case of obviousness exists. See MPEP 2144.05. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed Ni-base superalloy composition from the Ni-base superalloy composition disclosed by Cetel because Cetel teaches the same utility (i.e. a gas turbine component) in the whole disclosed range.

In regards to instant claims 10 and 13, claim 1 of Cetel teaches that the nickel base superalloy is suitable for use in a gas turbine component. Therefore, it would have been obvious to one of ordinary skill in the art to use the nickel base superalloy of Cetel in the manufacturing of a gas turbine component.

Regarding instant claims 15 and 18, Cetel does not specifically teach that the nickel base superalloy is directionally solidified or that the gas turbine component is manufactured by a directional solidification casting method. However, instant claims 15 and 18 are product-by-process claims. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the

product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAITLIN FOGARTY whose telephone number is (571)270-3589. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

CF